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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,892	06/27/2005	Sammo Cho	CU-4288 WWP	1970

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EXAMINER
HA, DAC V

ART UNIT	PAPER NUMBER
2611	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/540,892	CHO ET AL.	
	Examiner	Art Unit	
	Dac V. Ha	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 February 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) *3,4,7 and 8* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 2, 5, 6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This is in response to the amendment filed 02/05/10.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. **Claims 1-2, 5-6** are rejected under 35 U.S.C. 103(a) as being unpatentable over Murata (US 6,470,004) in view of Norr (US 7,085,377) and Catreux et al. (US 6,802,035) (hereafter Catreux).

Re claim 1, Murata discloses:

"a capacity managing unit for dividing the source-coded data into divided data for a plurality of channels, and generating header information fore reconstruction of the divided data" in Fig. 3, element 41; col. 2, lines 10-17; col. 3, lines 38-58; col. 4, lines 1-10, 17-28; col. 5, lines 1-8, 15-17 in that, when the amount of data to be transmitted exceed the capacity of one channel (the assigned channel), an available data channel of other user is used in addition to the assigned channel for transmitting the data; and indication of such a situation is added in the header for assisting the receiver for correctly receiving the signal).

"a transmitting unit" (Fig. 2, elements 44, 45).

Murata differs from the claimed invention in that it does not teach “a source encoding unit for encoding data to be transmitted and generating source-coded data”; “a channel encoding unit for encoding each of the divided data according to each of channel environment and generating channel-coded data for transmitting the channel-coded data through multiple frequency bands”; “and multiplexing, modulating and transmitting the channel-coded data”.

However, these claimed subject matter are fundamental processing steps of a digital communication system, particularly, in the transmitter chain. Norr, in the same field of endeavor, teaches an example of “source encoding unit for encoding data to be transmitted and generating source-coded data” in Fig. 3, element 202; “a channel encoding unit for encoding the divided data” “and generating channel-coded data” in Fig. 3, element 218; and “multiplexing, modulating and transmitting the channel-coded” in Fig. 3, element 220; col. 1, lines 7-51.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the fundamental processing blocks of the transmitter chain, taught by Norr, into Murata, depending on a specific application, and a predictable result still can be expected.

Further, Catreux, in the same field of endeavor, discloses the claimed subject matter “a channel encoding unit for encoding each of the divided data according to each of channel environment and generating channel-coded data for transmitting the channel-coded data through multiple frequency bands” in a method for optimizing data

transmission in Abstract; col. 4, line 29 to col. 6, line 31. That is, Catreux teaches a method for adaptively selecting different combination of modulation and coding shemes in a plurality operation environments (i.e. TDMA, FDMA, OFDM) based upon the condition of the channel communication. More particularly, selective coding is applied to each transmitted data stream (col. 5, lines 57-60).

As well-known in the art, channel condition constantly varies due to a variety of factors (i.e. interference, multi-path fading, etc.), it would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the teaching of optimizing data transmission by use of adaptive modulation and coding, taught by Catreux, into Murata and Norr to further enhance the robustness of the system.

Re claim 2, Murata further discloses "wherein the capacity managing unit stores information of available capacity and unavailable capacity for each frequency band, divides the source-coded data in case that an available data capacity for transmitting the source-coded data does not exist in one channel but sum of the available data capacities of multiple channels can accommodate the source-coded data, and adds the header information in a data packet so as to reconstruct the data in the receiving apparatus" in Fig. 2; Fig. 3, element 41; col. 4, lines 19-21, 32-35; col. 3, lines 51-58.

Re claim 5, see corresponding apparatus claim 1 above. Further, Norr teaches the data to be transmitted includes "image data and audio data" in col. 2, liens 44-49.

Re claim 6, see corresponding apparatus claim 2 above.

Response to Arguments

4. Applicant's arguments filed 02/05/10 have been fully considered but they are not persuasive.

In the REMARKS/ARGUMENT filed 02/05/10, pages 8-9, applicant has essentially argued:

"However, the presently claimed invention provides a transmitting apparatus and method for **dividing data in order to transmit channel-coded data through a plurality of channels from multiple broadcasting sites and transmitting data having header information so as to reconstruct the data** in a receiving apparatus (specification at page 2, lines 11-15). Further, the applicants respectfully point out that the communication system of Murata is totally different from the disclosed broadcasting system of the presently claimed invention. That is, Murata merely discloses a channel management which is necessary for multilateral communication environments such as a mobile communication, but Murata does not teach, disclose or even suggest allocating predetermined data, e.g., packet data or a program, to a
plurality of channels and generating header information for recording/reconstructing of the divided data relating to the allocating in the broadcasting system as disclosed by presently amended claim 1 of the presently claimed invention.

In contrast, the applicants respectfully submit that the invention of Murata is only about ATM communication system as TDMA scheme among communication systems. In the ATM communication system of Murata, data is transmitted through slot as a form of the ATM cell. **ATM cell is a packet of fixed length for ATM communication system**.

Accordingly, Murata merely discloses allocating ATM cell to other slot according to slot capacity, but Murata does not teach, disclose or even suggest dividing data for a plurality of channels as disclosed by amended claim 1 of the presently claimed invention. That is, in the ATM communication system of Murata, data is transmitted as ATM cell, **packet without dividing data for a plurality of channels**. Further, Murata merely discloses information of instructing ATM cell insertion into an allocated user data channel and information of instructing available slot position in a user data channel of another terminal station. Therefore, since Murata does not disclose dividing data for a plurality of channels, Murata does not disclose generating header information for reconstruction of the divided data, as disclosed in amended claim 1 of the presently claimed invention."

Murata discloses a communication system capable of improving transmission efficiency by allocating the unused user channel as additional user channel for the transmission at issue when the amount of data to be transmitted is too large to carry by the assigned user channel. That is, in Murata, each user is assigned a user channel when connection is established (Fig. 1; col. 3, lines 33-35; col. 4,lines 63-64). When the data to be transmitted is determined to be too large to carry by the assigned user channel, a part of the user channel being assigned to other user but not used all part of

the user channel would be assigned as an additional user channel for transmitting the "too large to carry" data (col. 2, lines 10-16; col. 3, lines 39-51; col. 7, lines 7-13). As a result, the "too large to carry" data is now transmitted using the original assigned user channel and additional user channel. Further, as would be understood by one of ordinary skill in the art that the "too large to carry" data must be divided or partitioned so that it can be transmitted using both the original assigned user channel and the additional user channel. Therefore, Murata implicitly teaches the claimed subject matter "dividing the source-coded data into divided data for plural channels". Moreover, in order to notify the receiver whether the data is transferred through such an additional user channel, a header is generated and transmitted to the receiver (col. 3, lines 51-58; col. 4, lines 1-8). Therefore, Murata also teaches the claimed subject matter "generating header information for reconstruction of the divided data".

Applicant, on page 9, further has argued:

"Additionally, as should be appreciated by the examiner, Nonr and/or Catreux merely discloses a multi-stream broadcasting system for transmitting a plurality of streams having different rights to access from each other. However, nowhere in Norr and/or Catreux discloses, suggests or even suggests allocating predetermined data, e.g., packet data or a program, to a plurality of channels and **generating header information for reconstruction of the divided data**, as disclosed by amended claim 1 of the presently claimed invention."

It is noted that (as indicated in the above rejection) Norr and Catreux were not combined to teach the claimed subject matter "generating header information for reconstruction of the divided data" since Murata already discloses such claimed subject matter.

In regard to claims 2, 5 and 6, on page 10 of the REMARKS, applicant has argued using analogous reasons applied to claim 1, therefore, the examiner would like to refer to the response in regard to claim 1 above.

Pages 6-7 of the REMARKS, applicant essentially restates the examiner's rejection in the office action dated 11/09/09, thus, no further response is needed.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dac V. Ha whose telephone number is 571-272-3040. The examiner can normally be reached on 4/4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dac V. Ha/
Primary Examiner, Art Unit 2611